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08/935,844	09/23/97	WILSON R	E0295/7021

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EXAMINER	
MCLEAN, K	
ART UNIT	**PAPER NUMBER**
2751	9

DATE MAILED: 07/25/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.	Applicant(s)
08/935,844	Wilson et al.
Examiner	**Group Art Unit**
Kimberly McLean	2751

☒ Responsive to communication(s) filed on *May 12, 2000* .

☒ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire *3* month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) *1-67* is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) *1-67* is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐approved ☐disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____ .

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____ .

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☐ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

— SEE OFFICE ACTION ON THE FOLLOWING PAGES —

DETAILED ACTION

1. The enclosed detailed action is in response to the Amendment submitted on May 17, 2000.

Claim Rejections - 35 U.S.C. § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-2, 5, 10-12, 19, 39-40, 46-48, 51-52 and 61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zarrow (USPN: 5,991,813) in view of the admitted prior art Yanai (USPN: 5,544,537).

Regarding claims 1, 10-12, 39, 46-47, 51-52 and 61, Zarrow discloses a computer system comprising a CPU (inherent to a computer; Figure 1, Reference 10); a first storage system that is coupled to the CPU to store information written from the CPU (Figure 1, Reference 16); a second storage system (Figure 1, Reference 18); at least one communication link coupling the second storage system to the CPU, the at least one communication link including a network cloud (WAN) that is shared with at least one other resource so that no portion of the network cloud is dedicated exclusively to transferring information between the CPU and the second storage system (Figure 1, Reference 14; C 2, L ~~1-3~~ 51-53, and a mirror controller responsive to the information being written from the CPU to the first storage system to mirror at least some of the information written

from the CPU to the first storage system in the second storage system by transferring the at least some of the information through the network cloud (C 4, L 41-67; C 5, L 1-35). Zarrow does not explicitly disclose the communication link extending between the first and second storage systems such that the second system is coupled to the CPU via the first storage system. However, Yanai does teach this feature (Figure 1, Reference 40; C 4, L 50-56). Yanai teaches that this feature allows data mirroring from a primary data storage system to a secondary storage system without the intervention of the host which improves the performance of the system (C 2, L 25-33). Yanai also teaches that host (server) intervention seriously degrades the performance of the data transfer link between the host computer and the primary storage device. One of ordinary skill in the art would have also recognized that this feature allows the host to perform other task while the storage controller performs the mirroring operation, thereby improving the performance of the system. Therefore, one of ordinary skill in the art would have been motivated to add the teachings of Yanai to the teachings of Zarrow (remote mirroring over a WAN) for the desirable purpose of improved performance.

51-53

Regarding claims 2, 19, 40 and 48, Zarrow teaches a WAN (Internet) (C 2, L ~~1-3~~).

Regarding claim 5, Zarrow teaches data mirroring over a WAN. A WAN comprises many resources. The protocol implemented in such a network allows for communication between any of the resources.

Regarding claims 3, 18, 41 and 49, Zarrow teaches the concept of data mirroring over a network (WAN) as cited in claims 1, 39 and 47 above. Zarrow does not explicitly teach an Intranet network. However, mirroring is well known in the art for increased reliability which is a desirable feature in a network. Therefore, it would have been obvious to one of ordinary skill in the art to use the teachings of Zarrow and Yanai in an Intranet network for the desirable purpose of reliability.

4. Claims 4 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zarrow (USPN: 5,991,813) in view of the admitted prior art Yanai (USPN: 5,54,537) as applied to claim 1 and further in view of Black (Computer Networks: Protocols, Standards and Interfaces, 2nd Edition, 1993).

Zarrow and Yanai teach the limitations cited above in claim 1; however, Zarrow nor Yanai explicitly teach a packet switched and cell network communication link. Yet, it is evident that issues such as applications, cost and other factors would dictate the use of one type of communication link versus another. It is really an issue of design choice. Black teaches in Computer Networks: Protocols, Standards and Interfaces, pages 159 -161, that organizations with low to medium traffic volumes could benefit from a packet switch network because most of the carriers charge on the volume of traffic. Thus it would have been obvious to one of ordinary skill in the art to use the teachings of Zarrow and Yanai in a packet switch and cell network for a system with low to medium traffic volumes for the desirable purpose of efficiency and cost.

5. Claims 6-8, 15-16, 20-21, 42-44 and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zarrow (USPN: 5,991,813) in view of the admitted prior artYanai (USPN: 5,544,537) and Vishlitzky (USPN: 5,960,216).

Zarrow and Yanai disclose the limitations cited above for claims 1 and 39. However, Zarrow nor Yanai explicitly disclose a communication link comprising a plurality of communication paths for parallel transfer of packets. Vishlitzky discloses using a plurality of communication paths for parallel transfer of packets (Figure 3a, Reference 21a-21b; C 4, L 62-67; C 6, L 27-47). It also known in the art to transfer data on parallel paths for increased throughput (such as Packet switch networks). Vishlitzky teaches that this feature enhances reliability by providing more than one path(channel) in case of a failure in one of the channels and this feature increases bandwidth by transferring data on all the channels compared to just a single channel. Thus, it would have been obvious to one of ordinary skill in the art to use a communication link comprising a plurality of communication paths to the system taught by Zarrow and Yanai for increased throughput, reliability and improved system performance.

6. Claims 9 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zarrow (USPN: 5,991,813) in view of the admitted prior art Yanai (USPN: 5,544,537) as applied to claim 1 and further in view of Sparks (USPN: 5,212,784).

Zarrow and Yanai teach the limitations cited above for claim 1, however, neither explicitly teaches a communication link including a wireless connection. Sparks does suggest using a wireless

connection as a communication link in a backup/mirroring system (C 7, L 28-36). Sparks teaches that such a configuration would allow transmitting backup/mirroring data offsite immediately thus improving the reliability of the system. It is also well known that wireless connections such as satellites provide a large transmission capacity and improve reliability due to the lack of wires. Thus, it would have been obvious to one of ordinary skill in the art to use a wireless connection in the system taught by Zarrow and Yanai for increased reliability and increased throughput.

7. Claim 13 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zarrow (USPN: 5,991,813) in view of the admitted prior art Yanai (USPN: 5,544,537) as applied to claim 1 and further in view of Sparks (USPN: 5,212,784).

Zarrow and Yanai teach the limitations cited above in claims 1 and 39, however, neither explicitly teaches a third storage system having a third communication link wherein information from the primary storage unit is mirrored thereto. However, Sparks suggest using a third storage system and a third communication link for coupling the storage device to the CPU as an additional backup systems, wherein some of the information stored in the CPU would be mirrored/copied thereto (C 7, L 12-36). Sparks teaches that the additional backup system would provide simultaneous backup copies, thus increasing the reliability of the system (C 7, L 17-20). This concept is also known in RAID technology. Therefore, it would have been obvious to one of ordinary skill in the art to add a third storage device and a third communication link for storing

mirrored information of the first storage device to the system taught by Zarrow and Yanai for increased reliability.

8. Claims 22-30 and 53-55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zarrow (USPN: 5,991,813) in view of Sparks (USPN: 5,212,784) and the admitted prior art Yanai (USPN: 5,544,537).

Regarding claims 22, 24-26 and 53, Zarrow discloses a computer system comprising a CPU (inherent to a computer; Figure 1, Reference 10); a first storage system that is coupled to the CPU to store information written from the CPU (Figure 1, Reference 16); a second storage system (Figure 1, Reference 18); at least one communication link coupling the second storage system to the CPU (Figure 1, Reference 14; C 2, L 1-3); and a mirror controller responsive to the information being written from the CPU to the first storage system to mirror at least some of the information written from the CPU to the first storage system in the second storage system by transferring the at least some of the information over the at least one communication link (C 4, L 41-67; C 5, L 1-35). Zarrow does not explicitly disclose a the at least one communication link comprising at least one wireless connection. However, Sparks does suggest using a wireless connection as a communication link in a backup/mirroring system (C 7, L 28-36). Sparks teaches that such a configuration would allow transmitting backup/mirroring data offsite immediately thus improving the reliability of the system. It is also well known that wireless connections such as satellites provide a large transmission capacity and improve reliability due to the lack of wires.

Thus, it would have been obvious to one of ordinary skill in the art to use a wireless connection in Zarrow's system for increased reliability and increased throughput. Zarrow nor Sparks explicitly discloses the communication link extending between the first and second storage systems such that the second system is coupled to the CPU via the first storage system. However, Yanai does teach this feature (Figure 1, Reference 40; C 4, L 50-56). Yanai teaches that this feature allows data mirroring from a primary data storage system to a secondary storage system without the intervention of the host which improves the performance of the system (C 2, L 25-33). Yanai also teaches that host (server) intervention seriously degrades the performance of the data transfer link between the host computer and the primary storage device. One of ordinary skill in the art would have also recognized that this feature allows the host to perform other task while the storage controller performs the mirroring operation, thereby improving the performance of the system. Therefore, one of ordinary skill in the art would have been motivated to add the teachings of Yanai to the teachings of Zarrow and Sparks for the desirable purpose of improved performance.

Claim 23 is rejected for the same rationale as applied to claim 3 above.

Regarding claims 27-30 and 54-55, it is well known to use satellites and microwave systems for a wireless communication link. It would have been obvious to use either for the desirable purpose of design choice.

9. Claims 31-33 and 35-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zarrow (USPN: 5,991,813) in view of Sparks (USPN: 5,212,784) and the admitted prior art Yanai (USPN: 5,544,537).

Zarrow discloses a computer system comprising a CPU (inherent to a computer; Figure 1, Reference 10); a first communication link (Figure 1, Reference 32); a first storage system coupled to the CPU via the first communication link to store information written from the CPU (Figure 1, Reference 16); a second storage system (Figure 1, Reference 18); a second communication link coupling the second storage system to the CPU (Figure 1, Reference 14); and a mirror controller responsive to the information being written from the CPU to the first storage system to mirror at least some of the information written from the CPU to the first storage system in the second storage system (C 4, L 41-67; C 5, L 1-35). Zarrow does not explicitly disclose a third storage system and a third communication link coupling the third storage system to the CPU. However, Sparks suggest using a third storage system and a third communication link for coupling the storage device to the CPU as an additional backup systems, wherein some of the information stored in the CPU would be mirrored/copied thereto (C 7, L 12-36). Sparks teaches that the additional backup system would provide simultaneous backup copies, thus increasing the reliability of the system (C 7, L 17-20). This concept is also known in RAID technology. Therefore, it would have been obvious to one of ordinary skill in the art to add a third storage device and a third communication link for storing mirrored information of the first storage device to Zarrow's system for increased reliability. Zarrow nor Sparks explicitly discloses the

communication link extending between the first and second storage systems and the first and third storage system such that the second system and third storage system is coupled to the CPU via the first storage system. However, Yanai does teach the concept of extending the communication link between a primary and secondary (backup) storage systems such that the secondary storage system is coupled to the host via the first storage system (Figure 1, Reference 40; C 4, L 50-56). Yanai teaches that this feature allows data mirroring from a primary data storage system to a secondary storage system without the intervention of the host which improves the performance of the system (C 2, L 25-33). Yanai also teaches that host (server) intervention seriously degrades the performance of the data transfer link between the host computer and the primary storage device. One of ordinary skill in the art would have also recognized that this feature allows the host to perform other task while the storage controller performs the mirroring operation, thereby improving the performance of the system. Therefore, it would have been obvious to one of ordinary skill in the art to add the teachings of Yanai to the teachings of Zarrow and Sparks for the desirable purpose of improved performance.

Regarding claims 35 and 38, multicasting is known in the art. It is an efficient way of transferring data to simultaneously to multiple devices. Thus it would have been obvious to one of ordinary skill in the art to use multicasting in the system taught by Zarrow and Sparks for the desirable purpose of efficiency.

10. Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zarrow (USPN: 5,991,813) in view of Sparks (USPN: 5,212,784) as applied to claim 31 above and further in view of Black (Computer Networks: Protocols, Standards and Interfaces, 2nd Edition, 1993). Zarrow and Sparks teach the limitations cited above in claim 34, however, Zarrow and Sparks do not explicitly teach a packet switched and cell network communication link. However, it is evident that issues such as applications, cost and other factors would dictate the use of one type of communication link versus another. It is really an issue of design choice. Black teaches in Computer Networks: Protocols, Standards and Interfaces, pages 159 -161, that organizations with low to medium traffic volumes could benefit from a packet switch network because most of the carriers charge on the volume of traffic. Thus it would have been obvious to one of ordinary skill in the art to use the teachings of Zarrow and Sparks in a packet switch and cell network for a system with low to medium traffic volumes for the desirable purpose of efficiency and cost.

11. Claims 56-58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zarrow (USPN: 5,991,813) in view of Staheli (USPN: 5,537,533) and Yanai (USPN: 5,544,537). Zarrow discloses a computer system comprising a CPU (inherent to a computer; Figure 1, Reference 10); a first storage system that is coupled to the CPU to store information written from the CPU (Figure 1, Reference 16); a second storage system (Figure 1, Reference 18); at least one communication link coupling the second storage system to the CPU (Figure 1, Reference 14; C 2, L 1-3); and a mirror controller responsive to the information being written from the CPU to the

first storage system to mirror at least some of the information written from the CPU to the first storage system in the second storage system by transferring the at least some of the information over the at least one communication link (C 4, L 41-67; C 5, L 1-35). Zarrow does not explicitly disclose the at least one communication link being selected from a group consisting of an Ethernet link, an asynchronous transfer mode (ATM) link, and FDDI link and a fibre channel link. Staheli does disclose at least one communication link coupling the second storage system to the CPU, where the at least one communication link is one of an Ethernet link, an asynchronous transfer mode (ATM) link, FDDI link or a fibre channel link (C 12, L 49-63). There are advantages and disadvantages to using the different communication links stated above and depending on a system's applications, users, cost and other factors one of ordinary skill in the art would have been motivated to use one of an Ethernet link, an asynchronous transfer mode (ATM) link, FDDI link or a fibre channel link for the desirable purpose of design choice. Zarrow nor Staheli explicitly discloses the communication link extending between the first and second storage systems such that the second system is coupled to the CPU via the first storage system. However, Yanai does teach this feature (Figure 1, Reference 40; C 4, L 50-56). Yanai teaches that this feature allows data mirroring from a primary data storage system to a secondary storage system without the intervention of the host which improves the performance of the system (C 2, L 25-33). Yanai also teaches that host (server) intervention seriously degrades the performance of the data transfer link between the host computer and the primary storage device. One of ordinary skill in the art would have also recognized that this feature allows the host to perform other task

while the storage controller performs the mirroring operation, thereby improving the performance of the system. Therefore, one of ordinary skill in the art would have been motivated to add the teachings of Yanai to the teachings of Zarrow and Staheli for the desirable purpose of improved performance.

12. Claim 59-60 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zarrow (USPN: 5,991,813) in view of Black (Computer Networks: Protocols, Standards and Interfaces, 2nd Edition, 1993) and the admitted prior art Yanai (USPN: 5,544,537).

Zarrow discloses a computer system comprising a CPU (inherent to a computer; Figure 1, Reference 10); a first storage system that is coupled to the CPU to store information written from the CPU (Figure 1, Reference 16); a second storage system (Figure 1, Reference 18); at least one communication link coupling the second storage system to the CPU (Figure 1, Reference 14; C 2, L 1-3); and a mirror controller responsive to the information being written from the CPU to the first storage system to mirror at least some of the information written from the CPU to the first storage system in the second storage system by transferring the at least some of the information over the at least one communication link (C 4, L 41-67; C 5, L 1-35). Zarrow does not explicitly disclose the at least one communication link being one of a packet switched and cell switch network. However, it is evident that issues such as applications, cost and other factors would dictate the use of one type of communication link versus another. It is really an issue of design choice. Black teaches in Computer Networks: Protocols, Standards and Interfaces, pages 159 -

161, that organizations with low to medium traffic volumes could benefit from a packet switch network because most of the carriers charge on the volume of traffic. Thus it would have been obvious to one of ordinary skill in the art to use the teachings of Zarrow in a packet switch and cell network for a system with low to medium traffic volumes for the desirable purpose of efficiency and cost. Zarrow nor Black explicitly discloses the communication link extending between the first and second storage systems such that the second system is coupled to the CPU via the first storage system. However, Yanai does teach this feature (Figure 1, Reference 40; C 4, L 50-56). Yanai teaches that this feature allows data mirroring from a primary data storage system to a secondary storage system without the intervention of the host which improves the performance of the system (C 2, L 25-33). Yanai also teaches that host (server) intervention seriously degrades the performance of the data transfer link between the host computer and the primary storage device. One of ordinary skill in the art would have also recognized that this feature allows the host to perform other task while the storage controller performs the mirroring operation, thereby improving the performance of the system. Therefore, one of ordinary skill in the art would have been motivated to add the teachings of Yanai to the teachings of Zarrow and Black for the desirable purpose of improved performance.

13. Claims 62-67 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zarrow (USPN: 5,991,813) in view of the admitted prior art Yanai (USPN: 5,544,537) and Vishlitzky (USPN: 5,960,216).

Regarding claims 62-67, Zarrow discloses a computer system comprising a CPU (Figure 1, Reference 10); a first storage system that is coupled to the CPU to store information written from the CPU (Figure 1, Reference 16); a second storage system (Figure 1, Reference 18); at least one communication link coupling the second storage system to the CPU, the at least one communication link including a network cloud (WAN) that is shared with at least one other resource so that no portion of the network cloud is dedicated exclusively to transferring information between the CPU and the second storage system (Figure 1, Reference 14; C 2, L 1-3); and a mirror controller responsive to the information being written from the CPU to the first storage system to mirror at least some of the information written from the CPU to the first storage system in the second storage system by transferring the at least some of the information through the network cloud (C 4, L 41-67; C 5, L 1-35). Zarrow does not explicitly disclose the communication link extending between the first and second storage systems such that the second system is coupled to the CPU via the first storage system. However, Yanai does teach this feature (Figure 1, Reference 40; C 4, L 50-56). Yanai teaches that this feature allows data mirroring from a primary data storage system to a secondary storage system without the intervention of the host which improves the performance of the system (C 2, L 25-33). Yanai also teaches that host (server) intervention seriously degrades the performance of the data transfer link between the host computer and the primary storage device. One of ordinary skill in the art would have also recognized that this feature allows the host to perform other task while the storage controller performs the mirroring operation, thereby improving the performance of the

system. Therefore, one of ordinary skill in the art would have been motivated to add the teachings of Yanai to the teachings of Zarrow for the desirable purpose of improved performance. Zarrow nor Yanai explicitly disclose a communication link comprising a plurality of communication paths for parallel transfer of packets. Vishlitzky discloses using a plurality of communication paths for parallel transfer of packets (Figure 3a, Reference 21a-21b; C 4, L 62-67; C 6, L 27-47). It also known in the art to transfer data on parallel paths for increased throughput (such as Packet switch networks). Vishlitzky teaches that this feature enhances reliability by providing more than one path(channel) in case of a failure in one of the channels and this feature increases bandwidth by transferring data on all the channels compared to just a single channel. Thus, it would have been obvious to one of ordinary skill in the art to use a communication link comprising a plurality of communication paths to the system taught by Zarrow and Yanai for increased throughput, reliability and improved system performance.

Response to Arguments

14. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

However, with respect to Applicant's argument that Zarrow teachings does not permit such an arrangement (Yanai's teachings), the Applicant does not teach directly coupling a local storage controller to a remote storage controller. The local storage controller is interfaced to a local network controller which is coupled to a remote network controller which is coupled to a remote

storage controller. It is well known in the art to use a network controller to communicate over a network which is taught by Zarrow. It is also well known that the type of interface used to interface a storage controller to a communication channel will vary depending on the transmission medium used for the application (See Vishlitzky C 6, L 27-31).

It should also be noted that, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

Conclusion

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kimberly McLean whose telephone number is (703) 308-9592 (e-mail address: Kimberly.McLean2@uspto.gov). If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Chan, can be reached on (703) 305-9712.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-9000.

Any formal response to this action intended for entry should be mailed to Commissioner of Patents and Trademarks, Washington, D.C. 20231 or faxed to (703) 305-9051 and labeled "FORMAL" or "OFFICIAL". Any informal or draft communication should be faxed to (703) 305-9731 and labeled "INFORMAL" or "UNOFFICIAL" or "DRAFT" or "PROPOSED" and followed by a phone call to the Examiner at the above number. Hand-delivered responses should be brought to Crystal Park II, 2021 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

KNM

February 3, 2000

EDDIE P. CHAN
SUPERVISORY PATENT EXAMINER